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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,930	10/28/2003	Akio Omiya	Q78145	4147

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EXAMINER	
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ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,930	OMIYA ET AL.	
	Examiner	Art Unit	
	Nelson D. Hernandez	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *12,14-25,29 and 31-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,11,13,26-28 and 30* is/are rejected.

7)☒ Claim(s) *4-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/28/2003 & 12/8/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species 1 (Figs. 1-18; claims 1-11, 13, 26-28 and 30) in the reply filed on April 19, 2007 is acknowledged.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 11, 13, 26-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al., US 2003/0156832 A1 in view of Wakabayashi et al., US Patent 4,937,609.

Regarding claim 1, Nomura et al. discloses a digital camera (Fig. 1) that creates an image signal through catching a subject light, the digital camera comprising: an image taking lens (See fig. 1), which is variable in a focal length, comprising three groups of a first lens group (Fig. 1: L1), a second lens group (Fig. 1: L2), and a third

lens group (Fig. 1: L3) in the named order with respect to an optical axis direction; a lens barrel (Fig. 1: 12) that incorporates therein the image taking lens, having in front an aperture through which the image taking lens appears and having in rear an internal space defined by a wall (Fig. 1: 11), the lens barrel being free in extension and collapse and performing a focal length control; and a solid state imaging device (Fig. 1: C) that receives the subject light formed by the image taking lens to create the image signal, the solid state imaging device being supported by the wall (See fig. 1), wherein the lens barrel has: a second lens group (zoom lens L2) advancing and saving mechanism in which at the time of the collapse of the lens barrel, the second lens group is saved to a second lens group saving position out of an optical axis of the image taking lens, and at the time of the extension of the lens barrel, the second lens group is advanced onto the optical axis of the image taking lens (See fig. 2) (Page 2, ¶ 0051; page 3, ¶ 0052-0054); and a first lens group (taking lens L1) advancing and saving mechanism in which at the time of the collapse of the lens barrel, the first lens group is saved to a first lens group saving position out of the optical axis, and at the time of the extension of the lens barrel, the first lens group is advanced onto the optical (See fig. 2) (Page 2, ¶ 0051; page 3, ¶ 0052-0054).

Although Nomura et al. does not explicitly disclose that the third lens (focus lens) is the lens saved to a lens group saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the third lens group is advanced onto the optical axis of the image taking lens, Nomura et al. discloses that the fundamental principle of the invention is that an element of a plurality of optical

elements is removed from a position on the optical axis of the plurality of optical elements to a different position outside of the optical axis, and the removed element and at least one element of the remaining optical element(s) of the plurality of optical elements are moved rearward along the optical axis, for the purpose of refracting the plurality of optical elements from a ready-to-photograph state which initially lie on a single optical axis and that the structure of the retractable lens system according to the invention is not limited solely to that of the illustrated embodiments taught as long as the structure is designed on this fundamental principle. Nomura et al. also discloses that more than one of the lens groups can be positioned outside the optical axis to retract the lens barrel even more (Page 6, ¶ 0073-0077).

Wakabayashi et al. teaches a camera (See fig. 4) comprising a lens barrel (See figs. 3 and 4) in which a focus lens (Fig. 3: 80) and a wide-angle lens (Fig. 3: 70) are removed for the optical axis of the main lens (Fig. 4: 60) depending on the operation of the camera in order to perform proper focus adjustment of the image being captured (Col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31).

Although Wakabayashi et al. does not explicitly teach that the focus lens is removed for the optical axis in order to retract or extend the lens barrel. One of ordinary skill in the art would find obvious to combine the teaching of rearranging any of the optical element to retract even more the lens barrel in Nomura et al. in view of the teaching of removing the focusing lens out of the optical path depending on a camera operation as taught in Wakabayashi et al. to modify the camera in Nomura et al to have the third lens group saved to third a lens group saving position out of the optical axis of

the image taking lens, and at the time of the extension of the lens barrel, the third lens group is advanced onto the optical axis of the image taking lens. The motivation to do so would have been to perform proper focus adjustment of the image being captured and to have the lens barrel retracting as much as possible in order to reduce the camera size making it more portable.

Regarding claim 2, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed in claim 1 teaches a focusing mechanism (Fig. 1: L3) wherein a focusing is performed by a movement of the third lens group in the optical axis direction (Page 2, ¶ 0051; page 3, ¶ 0052-0054). Grounds for rejecting claim 1 apply here.

Regarding claim 3, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed in claim 1 teaches that the lens barrel has: a second lens (rear lens) group guide frame (Nomura et al., fig. 1: 19; page 4, ¶ 0060 – page 5, ¶ 0066) that moves in the optical axis direction in accordance with the extension, the collapse and the focal length control so as to determine a position related to the optical axis direction of the second lens group; and a second lens (rear lens) group holding frame (Nomura et al., fig. 1: 21) that holds the second lens group and is pivotally supported by the second lens group guide frame, the second lens group holding frame causing the second lens group to revolve on the optical axis of the image taking lens at the time of the extension, and the second lens group holding frame causing the second lens group to revolve on the second lens group saving position at the time of the collapse (Nomura et al., page 4, ¶ 0060 – page 5, ¶ 0066), and wherein

the lens barrel has: a third lens (focus lens) group guide frame (Wakabayashi et al., figs. 3: 83 and 3: 82) that moves in the optical axis direction in accordance with the extension, the collapse and the focusing so as to determine a position related to the optical axis direction of the third lens (focus lens) group; and a third lens group holding frame (Wakabayashi et al., fig. 3, 81) that holds the third lens group and is pivotally supported by the third lens group guide frame, the third lens group holding frame causing the third lens group to revolve on the optical axis of the image taking lens at the time of the extension, and the third lens group holding frame causing the third lens group to revolve onto the third lens group saving position at the time of the collapse (Wakabayashi et al., col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31). Grounds for rejecting claim 1 apply here.

Regarding claim 11, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed in claim 1 teaches that the solid state imaging device being disposed at a position projecting from the wall to the internal space and being supported by the wall (See Nomura et al., fig. 1), and the second lens group holding frame (Nomura et al., fig. 1: 21) and the third lens group holding frame (Wakabayashi et al., fig. 3, 81) cause the second lens group and the third lens group to revolve onto the second lens group saving position set up to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device and the third lens group saving position, respectively, at the time of the collapse (Nomura et al., page 2, ¶ 0051; page 3, ¶ 0052-0054; Wakabayashi et al., col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31). Grounds for rejecting claim 1 apply here.

Regarding claim 13, the second lens group holding frame (Nomura et al., fig. 1: 21) and the third lens group holding frame (Wakabayashi et al., fig. 3, 81) have their centers of rotatable movement with respect to the second lens group guide frame (Nomura et al., fig. 1: 19; page 4, ¶ 0060 – page 5, ¶ 0066) and the third lens group guide frame (Wakabayashi et al., figs. 3: 83 and 3: 82) at mutually opposite positions with respect to the optical axis (by modifying the Nomura et al. reference interchanging the front lens L1 with the focus lens as taught in Wakabayashi et al., would result in having the second lens group holding frame and the third lens group holding frame have their centers of rotatable movement with respect to the second lens group guide frame and the third lens group guide frame at mutually opposite positions with respect to the optical axis as shown in fig. 1 in Nomura et al.) (Wakabayashi et al., col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31). Grounds for rejecting claim 1 apply here.

Regarding claim 26, Nomura et al. discloses a digital camera (Fig. 1) that creates an image signal through catching a subject light, the digital camera comprising: an image taking lens (Fig. 1: 10), which is variable in a focal length, comprising three groups of a front elements lens (Fig. 1: L1), a rear elements lens (Fig. 1: L2), and a focus lens (Fig. 1: L1) in the named order with respect to an optical axis direction, wherein a focusing is performed by a movement of the focus lens (Page 2, ¶ 0051; page 3, ¶ 0052-0054); a lens barrel (Fig. 1: 12) that incorporates therein the image taking lens (Fig. 1: 10), having in front an aperture through which the image taking lens appears and having in rear an internal space defined by a wall (Fig. 1: 11), the lens

barrel being free in extension and collapse and performing a focal length control (Page 2, ¶ 0051; page 3, ¶ 0052-0054); and a solid state imaging device (Fig. 1: C) that receives the subject light formed by the image taking lens to create the image signal, the solid state imaging device being supported by the wall (See fig. 1), wherein the lens barrel has: a rear elements lens advancing and saving mechanism (See fig. 1) in which at the time of the collapse of the lens barrel, the rear elements lens is saved to a rear elements lens saving position out of an optical axis of the image taking lens, and at the time of the extension of the lens barrel, the rear elements lens is advanced onto the optical axis of the image taking lens (Page 2, ¶ 0051; page 3, ¶ 0052-0054; page 4, ¶ 0060 – page 5, ¶ 0066); and a front element lens advancing and saving mechanism in which at the time of the collapse of the lens barrel, the front element lens is saved to a focus lens saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the front element lens is advanced onto the optical axis of the image taking lens (Page 2, ¶ 0051; page 3, ¶ 0052-0054; page 4, ¶ 0060 – page 5, ¶ 0066).

Although Nomura et al. does not explicitly disclose that the focus lens is the lens saved to a focus lens saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the focus lens is advanced onto the optical axis of the image taking lens, Nomura et al. discloses that the fundamental principle of the invention is that an element of a plurality of optical elements is removed from a position on the optical axis of the plurality of optical elements to a different position outside of the optical axis, and the removed element and at least one element

of the remaining optical element(s) of the plurality of optical elements are moved rearward along the optical axis, for the purpose of refracting the plurality of optical elements from a ready-to-photograph state which initially lie on a single optical axis and that the structure of the retractable lens system according to the invention is not limited solely to that of the illustrated embodiments taught as long as the structure is designed on this fundamental principle. Nomura et al. also discloses that more than one of the lens groups can be positioned outside the optical axis to retract the lens barrel even more (Page 6, ¶ 0073-0077).

Wakabayashi et al. teaches a camera (See fig. 4) comprising a lens barrel (See figs. 3 and 4) in which a focus lens (Fig. 3: 80) and a wide-angle lens (Fig. 3: 70) are removed for the optical axis of the main lens (Fig. 4: 60) depending on the operation of the camera in order to perform proper focus adjustment of the image being captured (Col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31).

Although Wakabayashi et al. does not explicitly teach that the focus lens is removed for the optical axis in order to retract or extend the lens barrel. One of ordinary skill in the art would find obvious to combine the teaching of rearranging any of the optical element to retract even more the lens barrel in Nomura et al. in view of the teaching of removing the focusing lens out of the optical path depending on a camera operation as taught in Wakabayashi et al. to modify the camera in Nomura et al to have the focus lens saved to a focus lens saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the focus lens is advanced onto the optical axis of the image taking lens. The motivation to do so would

have been to perform proper focus adjustment of the image being captured and to have the lens barrel retracting as much as possible in order to reduce the camera size making it more portable.

Regarding claim 27, limitations can be found in claim 3.

Regarding claim 28, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed in claim 26 teaches that the solid state imaging device being disposed at a position projecting from the wall to the internal space and being supported by the wall (See Nomura et al., fig. 1), and the rear elements holding frame (Nomura et al., fig. 1: 21) and the focus lens holding frame (Wakabayashi et al., fig. 3, 81) cause the rear elements lens and the focus lens to revolve onto the rear elements lens saving position set up to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device and the focus lens saving position, respectively, at the time of the collapse (Nomura et al., page 2, ¶ 0051; page 3, ¶ 0052-0054; Wakabayashi et al., col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31). Grounds for rejecting claim 26 apply here.

Regarding claim 30, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed in claim 26 teaches that the rear elements holding frame and the focus lens holding frame cause the rear elements lens and the focus lens to revolve onto the rear elements lens saving position and the focus lens saving position set up to positions beside the front elements lens, respectively, at the time of the collapse, wherein there is defined a plane vertical to the optical axis, which crosses, at the time of the collapse, the front elements lens, the rear elements

lens and the focus lens (by modifying the Nomura et al reference interchanging the front lens L1 with the focus lens as taught in Wakabayashi et al., would result in having the rear elements holding frame and the focus lens holding frame cause the rear elements lens and the focus lens to revolve onto the rear elements lens saving position and the focus lens saving position set up to positions beside the front elements lens, respectively, at the time of the collapse, wherein there is defined a plane vertical to the optical axis, which crosses, at the time of the collapse, the front elements lens, the rear elements lens and the focus lens (in Nomura et al., fig. 11, the lenses when collapsed would result in a plane vertical to the optical axis, which crosses, at the time of the collapse, the front elements lens, the rear elements lens and the focus lens)) Nomura et al., page 2, ¶ 0051; page 3, ¶ 0052-0054; Wakabayashi et al., col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31). Grounds for rejecting claim 26 apply here.

Allowable Subject Matter

5. **Claims 4-10** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 4, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the wall has a revolving affecting section having a geometry

projecting into the internal space, the revolving affecting section being in contact with the second lens group holding frame at the time of the collapse to affect revolving of the second lens group holding frame, and the second lens group holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the second lens group revolves into the second lens group saving position including all the limitations of claims 1 and 3.

Regarding claim 7, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the wall has a revolving affecting section having a geometry projecting into the internal space, the revolving affecting section being in contact with the third lens group holding frame at the time of the collapse to affect revolving of the third lens group holding frame, and the third lens group holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the third lens group revolves into the third lens group saving position including all the limitations of claims 1 and 3.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez
Examiner
Art Unit 2622

NDHH
May 7, 2007

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